

REMARKS

The Office action dated May 7, 2008, and the references cited therein have been carefully reviewed in light of the Examiner's helpful comments and suggestions.

By these amendments, claims 29 and 46 have been amended to recite that the method comprises providing a mask of hollow cylindrical form having a single central aperture, and that a location of the concrete surface is irradiated with the laser light by directing the beam through the central aperture of the mask, such that the mask blocks a peripheral part of the beam of laser light. The cylindrical structure of the mask is clearly described on page 16, line 17, page 17, line 10, and page 20, lines 21-22, of the specification, as well as in Figs. 4, 5, and 7.

The preamble of claims 29 and 46 have also been amended to recite that the surface portion is removed by the effect of thermal shock. Support for these amendments can be found in original claim 35, which has been canceled.

New claim 51 is directed to an apparatus for removing a portion of a concrete surface by the effect of thermal shock.

Claims 29, 31-33, 35, and 46-50 are rejected under 35 U.S.C. 103(a) as being obvious over Li et al. in view of Khoobehi et al.

These references have been carefully reviewed but are not

believed to disclose or suggest Applicants' invention as now claimed. Reconsideration and allowance of the pending claims is therefore respectfully requested in view of the following remarks.

As the Applicants explained in detail in their Amendment and Request for Reconsideration filed on February 9, 2008, the Khoobehi et al. reference has nothing to do with the removal of a concrete surface, but instead is directed to the problems pertinent to the delicate operation of laser sculpting of a patient's cornea.

The Applicants furthermore disagree with the Examiner's stated position that Khoobehi et al. teaches a shadow mask that covers a peripheral part of a laser light and is used to remove a low density part of the laser beam that is below a threshold power density for surface removal before the surface location is irradiated. No such statements, or corresponding disclosure in different terms, can be found in Khoobehi et al.

Rather, the mask in Khoobehi et al. is constructed as a grating mesh to control the power distribution through the mask (col. 2, lines 38-40). The mask consists of a transparent or translucent substrate with the grating mesh etched into a deposited metal, or other reflective or absorbing coating (col. 3, lines 5-8). The placement and size of patterns in the reflective coating are chosen to control

the transmission rate or power density of the laser (col. 3, lines 43-44). This is also borne out in the specific description in cols. 5 and 6 with reference to Figs. 5 to 10.

Clearly, therefore, Khoobehi et al. does not teach or remotely suggest a structure of a mask which can be combined with the teaching of Li et al. regarding surface removal of concrete by irradiation with a laser beam to result in the claimed invention.

The claimed invention is differentiated from a combination of the teaching of Khoobehi et al. and Li et al. by having a hollow cylindrical mask with a single central aperture which removes a peripheral low power density part of the laser beam. Clearly, incorporation of Khoobehi's mask into the Li et al. teaching would not result in the invention as presently claimed.

Accordingly, Applicants respectfully submit that the rejection under 35 U.S.C. 103(a) is unsustainable, and urge favorable reconsideration and withdrawal thereof.

Claims 29, 32, 33, 35, 46, and 48-50 are rejected under 35 U.S.C. 103(a) as being obvious over Li et al. in view of Neiheisel (US 5,736,709).

These references have been carefully reviewed but are not believed to disclose or suggest Applicants' invention as now claimed. Reconsideration and allowance of the pending claims

is therefore respectfully requested in view of the following remarks.

As regards Neiheisel, the Applicants again do not agree with the Examiner's stated position that items 68/60 in Neiheisel represent a mask means which are mounted to cover a peripheral part of the beam of laser light so as to remove a low power density part of the laser beam that is below a threshold power density for surface removal.

In fact, Neiheisel discloses that item 60 is a beam homogenizer which transforms the beam to having uniform energy intensity distribution (col. 10, line 57, and Fig. 2). Use of a step index optical fiber is mentioned as a specific possibility, and this is item 68 (col. 10, line 64, and Fig. 3). Such an optical fiber is clearly not a mask, neither a shadow mask nor a reflective mask, and it does not have the cylindrical structure with a single central aperture as recited in amended claims 29 and 45 and the new apparatus claim.

Applicants respectfully submit, therefore, that a combination of the Li et al. and Neiheisel references would not result in the invention as presently claimed. Accordingly, Applicants respectfully submit that the rejection under 35 U.S.C. 103(a) is unsustainable, and urge favorable reconsideration and withdrawal thereof.

Claims 29, 31, 35, 46, 47, and 50 are rejected under 35 U.S.C. 103(a) as being obvious over Li et al. in view of Ngoi et al.

These references have been carefully reviewed but are not believed to show or suggest Applicants' invention as now claimed. Reconsideration and allowance of the pending claims is therefore respectfully requested in view of the following remarks.

As regards Ngoi et al., this reference also does not teach a mask having the structure specified in claims as amended. This reference teaches use of a slot in a diaphragm 5 to enhance elimination of a peripheral portion of the laser beam (col. 5, lines 32-39, and Fig. 1). However, the structure of such a diaphragm is not described and it appears to be a membrane or similar. Again, the amended independent claims recite a different structure, namely a hollow cylindrical mask.

In view of the above amendments and remarks, it is clear that the invention as recited in the amended claims cannot be derived by mere combination of the teachings derived from each combination of documents, particularly when the particular fields of application described in Khoobehi et al., Neiheisel and Ngoi et al. are significantly different from concrete/natural stone surface removal by thermal shock, which

is the subject of the present invention.

Each issue raised in the Office action dated May 7, 2008, has been addressed, and it is believed that claims 29, 31-33, and 46-51 are in condition for allowance. Wherefore, Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Applicant hereby petitions the Commissioner for Patents to extend the time for reply to the notice dated May 7, 2008, for two (2) months from August 7, 2008, to October 7, 2008. A duly completed credit card authorization form is attached to effect payment of the extension fee.

Respectfully submitted,

DENNISON, SCHULTZ
& MACDONALD

October 7, 2008

By:



Malcolm J. MacDonald
Reg. No. 40,250
(703) 837-9600 Ext. 24